

**FORM PTO-1449**Atty Docket  
**LU 6144 (US)**Serial No.  
**10/539,242**

Applicant

**Shahram Mihan et al.**Filing Date  
**June 16, 2005**Group Art Unit  
**1796****INFORMATION DISCLOSURE CITATION****U.S. PATENT DOCUMENTS**

Examiner Initial		Document Number	Issue Date	Name	Class	Sub-Class	Filing Date
/CL/	AA	3,125,547	03/17/64	Blatz			
	AB	5,227,440	07/13/93	Canich et al.			
	AC	5,246,783	09/21/93	Spenadel et al.			
	AD	5,281,679	01/25/94	Jejelowo et al.			
	AE	5,625,016	04/29/97	Schiffino et al.			
	AF	5,698,642	12/16/97	Govoni et al.			
	AG	5,808,122	09/15/98	Herrmann et al.			
	AH	6,240,507	05/29/01	Derrick et al.			
	AI	6,255,418	07/03/01	Jolly et al.			
	AJ	6,281,153	08/28/01	Becke et al.			
	AK	6,326,445	12/04/01	Wenzel			
	AL	6,350,814	02/26/02	Bauer et al.			
	AM	6,413,477	07/02/02	Govoni et al.			
	AN	6,417,302	07/09/02	Bohnen			
	AO	6,420,507	07/16/02	Kale et al.			
	AP	6,437,161	08/20/02	Mihan et al.			
	AQ	6,589,905	07/08/03	Fischer et al.			
	AR	6,642,313	11/04/03	Kazakov et al.			
	AS	6,699,948	03/02/04	Mihan et al.			
	AT	6,737,130	05/18/04	Ferri			
	AU	6,784,261	08/31/04	Schopf et al.			
	AV	6,787,498	09/07/04	Mihan et al.			
	AW	6,812,185	11/02/04	Fischer et al.			
	AX	6,838,563	01/04/05	Mihan et al.			
	AY	6,911,516	06/28/05	Mihan et al.			
	AZ	6,919,412	07/19/05	Mihan et al.			
	AAA	6,924,248	08/02/05	Mihan et al.			
	AAB	7,045,644	05/16/06	Schopf et al.			
	AAC	7,053,160	05/30/06	Bingel et al.			
	AAD	7,094,724	08/22/06	Fraaije et al.			
	AAE	7,238,818	07/03/07	Ewen et al.			

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/CL/	BA	2003/0036658 (corresponds to US 6,699,948; US 6,919,412)	02/20/03	Mihan et al.	X	X	X
↓	BB	2003/0036662 (corresponds to US 6,787,498; US 6,919,412)	02/20/03	Mihan et al.			
	BC	2003/0055267 (corresponds to US 6,838,563; US 6,919,412)	03/20/03	Mihan et al.			
	BD	2003/0176275 (corresponds to US 7,094,724)	09/18/03	Fraaije et al.			
	BE	2003/0236164 (corresponds to US 6,812,185; US 6,588,905)	12/25/03	Fischer et al.			
	BF	2004/0242880	12/02/04	Mihan et al.			
	BG	2005/0282979	12/22/05	Mihan et al.			
	BH	2006/0116491	06/01/06	Mihan et al.			

**FOREIGN PATENT DOCUMENTS**

		Document Number	Date	Country	Class	Sub-Class	Translation
/CL/	BI	19710615 (corresponds to US 6,255,418)	09/17/98	DE	X	X	X
↓	BJ	19745047 (corresponds to US 6,350,814)	04/15/99	DE			
	BK	100,843	02/22/84	EP			
	BL	416,815	03/13/91	EP			
	BM	420,436	04/03/91	EP			
	BN	608,369	08/03/94	EP			
	BO	662,989	07/19/95	EP			
	BP	728,160	08/28/96	EP			
	BQ	742,046 (corresponds to US 5,808,122)	11/13/96	EP			
	BR	899,278	03/03/99	EP			
	BS	90/03414	04/05/90	WO			
	BT	91/09882	07/11/91	WO			
	BU	93/03093	02/18/93	WO			
	BV	93/12151	06/24/93	WO			
	BW	95/27005	10/12/95	WO			

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		Document Number	Date	Country	Class	Sub-Class	Translation
/CL/	CA	98/03559	01/29/98	WO	X	X	X
↓	CB	98/44011	10/08/98	WO			
	CC	01/12641 (corresponds to US 6,437,161; US 6,919,412; US 6,838,563; US 6,699,948; US 6,787,498)	02/22/01	WO			
	CD	01/12687 (corresponds to US 6,911,516)	02/22/01	WO			
	CE	01/96417 (corresponds to US 6,924,248)	12/20/01	WO			
	CF	01/96418 (corresponds to US 7,094,724)	12/20/01	WO			
	CG	03/024982 (corresponds to US 2004/0242880)	03/27/03	WO			
	CH	2004/056482 (corresponds to US 2006/0116491)	07/08/04	WO			
↓	CI	2004/056878 (corresponds to US 2005/0282979)	07/08/04	WO			

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/CL/	CJ	W. Friesleben, "Über eine neue Fulven-Synthese [1]," <u>Angew Chem.</u> , Vol. 75(12), p. 576 (1963)
↓	CK	L. Brandsma, Preparative Polar Organometallic Chemistry," Springer-Verlag, Vol. 2, p. 133-142 (1992)
	CL	J. Michl, Editor, <u>Chemical Reviews</u> , Vol. 100(4), p. 1169-1681 (2000)
	CM	L. Fieser et al., <u>Lehrbuch der Organischen Chemie</u> , Kapitel 33, p. 921-941, Weinheim (1957)
	CN	S. Pang et al., "Size-Exclusion Chromatographic Assessment of Long-Chain Branch Frequency in Polyethylenes," <u>Chromatography of Polymers</u> , ACS Symposium Series 521, edited by Theodore Provder, p. 254-269 (1993)
	CO	L. Wild, "Temperature Rising Elution Fractionation," <u>Advances in Polymer Science</u> 98, p. 1-47 (1999)
↓	CP	B. Monrabal, "Crystallization Analysis Fractionation: A New Technique for the Analysis of Branching Distribution in Polyolefins," <u>J. of Applied Polymer Science</u> , Vol. 52, p. 491-499 (1994)

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/CL/	DA	M. Enders et al., "New Chromium (III) Complexes as Highly Active Catalysts for Olefin Polymerization," <u>Organometallics</u> , Vol. 20(24), p. 5005-5007 (2001) <b>XP-001112032</b>
	DB	S. Bradley et al., "Synthesis and Structure of Amino-Functionalized Cyclopentadienyl Vanadium Complexes and Evaluation of Their Butadiene Polymerization Behavior," <u>Organometallics</u> , Vol. 21(16), p. 3443-3453 (2002)
	DC	G. Kraus et al., "A Method for Characterization of Long-Chain Branched Polymers by GPC and Intrinsic Viscosity," <u>J. Polymer Sci.: Symposium No. 43</u> , p. 329-343 (1973)
	DD	M. Pollard et al., "Observation of Chain Branching in Polyethylene in the Solid State and Melt via <sup>13</sup> C NMR Spectroscopy and Melt NMR Relaxation Time Measurements," <u>Macromolecules</u> , Vol. 37(3), p. 813,825 (2004)
	DE	R. Koopmans, "Extrudate Swell of High Density Polyethylene. Part I: Aspects of Molecular Structure and Rheological Characterization Methods," <u>Polymer Engineering and Science</u> , Vol. 32(23), p. 1741-1749 (1992)
	DF	J. Vega et al., "Small-Amplitude Oscillatory Shear Flow Measurements as a Tool To Detect Very Low Amounts of Long Chain Branching in Polyethylenes," <u>Macromolecules</u> , Vol. 31(11), p. 3639-3647 (1998)
	DG	P. Wood-Adams et al., "Effect of Molecular Structure on the Linear Viscoelastic Behavior of Polyethylene," <u>Macromolecules</u> , Vol. 33(20), p. 7489-7499 (2000)
	DH	C. Piel et al., "Structure-Property Relationships of Linear and Long-Chain Branched Metallocene High-Density Polyethylenes Characterized by Shear Rheology and SEC-MALLS," <u>Macromolecular Chemistry and Physics</u> , Vol. 207, p. 26-38 (2006)
	DI	W. Kaminsky et al., "Polymerization of Ethene and Longer Chained Olefins by Metallocene Catalysis," <u>Macromol. Symp.</u> , Vol. 226, p. 25-34 (2005)
	DJ	K. Klimke et al., "Optimisation and Application of Polyolefin Branch Quantification by Melt-State <sup>13</sup> C NMR Spectroscopy," <u>Macromol. Chem. Phys.</u> , Vol. 207, p. 382-395 (2006)
	DK	S. Bin Wadud et al., "Shear and extensional rheology of sparsely branched metallocene-catalyzed polyethylenes," <u>J. Rheol.</u> , Vol. 44(5), p. 1151-1167 (2000)
	DL	D. Yan et al., "Effect of long chain branching on rheological properties of metallocene polyethylene," <u>Polymer</u> , Vol. 40, p. 1737-1744 (1999)
	DM	F. Stadler et al., "Influence of type and content of very long comonomers on long-chain branching of ethene- $\alpha$ -olefin copolymers," <u>Macromolecules</u> , Vol. 39(4), p. 1474-1500 (2006)
↓	DN	J. Janzen et al., "Diagnosing long-chain branching in polyethylenes," <u>Journal of Molecular Structure</u> , Vol. 485-486, p. 569-584 (1999)

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/CL/	EA		C. Gabriel et al., "Analytical and rheological characterization of long-chain branched metallocene-catalyzed ethylene homopolymers," <u>Polymer</u> , Vol. 43, p. 6383-6390 (2002)
	EB		B. Zimm et al., "The Dimension of Chain Molecules Containing Branches and Rings," <u>The Journal of Chemical Physics</u> , Vol. 17(12), p. 1301-1314 (1949)
	EC		H. Barth et al., <u>Modern Methods of Polymer Characterization</u> , Chemical Analysis, Vol. 113, New York: Wiley (1991); Table of Contents
	ED		Hadjichristidis et al., "Well-Defined, Model Long Chain Branched Polyethylene. 1. Synthesis and Characterization," <u>Macromolecules</u> , Vol. 33(7), p. 2424-2436 (2000)
	EE		E. Kokko et al., "Long-Chain Branched Polyethylene via Metallocene-Catalysis: Comparison of Catalysts," Contribution in <u>Organometallic Catalysts and Olefin Polymerization</u> by R. Blom et al., p. 335-345 (2001)
	EF		J. Stange et al., "Rheological behavior of blends from a linear and a long-chain branched polypropylene," <u>J. Rheol.</u> , Vol. 49(5), p. 1059-1079 (2005)
	EG		H. Münstedt et al., "Rheological measuring techniques and their relevance for the molecular characterization of polymers," <u>J. Non-Newtonian Fluid Mech.</u> , Vol. 128, p. 1-8 (2005)
	EH		T. McLeish et al., "Molecular constitutive equations for a class of branched polymer: The pom-pom polymer," <u>J. Rheol.</u> , Vol. 42(1), p. 81-110 (1998)
	EI		I. Vittorias et al., "Detection and quantification of industrial polyethylene branching topologies via Fourier-transform rheology, NMR and simulation using the Pom-pom model," <u>Rheol. Acta</u> , Vol. 46, p. 321-340 (2007)
	EJ		E. van Ruymbeke et al., "A sensitive method to detect very low levels of long chain branching from the molar mass distribution and linear viscoelastic response," <u>J. Rheol.</u> , Vol. 49(6), p. 1-18 (2005)
	EK		S. Trinkle et al., "Van Gorp-Palmen Plot II-classification of long chain branched polymers by their topology," <u>Rheol Acta</u> ; Vol. 41, p. 103-113 (2002)
	EL		D. Lohse et al., "Well-Defined, Model Long Chain Branched Polyethylene. 2. Melt Rheological Behavior," <u>Macromolecules</u> , Vol. 35(8), p. 3066-3075 (2002)
	EM		C. Gabriel et al., "Influence of long-chain branches in polyethylenes on linear viscoelastic flow properties in shear," <u>Rheol Acta</u> , Vol. 41, p. 232-244 (2002)
	EN		B. Bersted et al., "Prediction of Rheological Behavior of Branched Polyethylene from Molecular Structure," <u>Journal of Applied Polymer Science</u> , Vol. 26, p. 1001-1014 (1981)
↓	EO		B. Bersted, "On the Effects of Very Low Levels of Long Chain Branching on Rheological Behavior in Polyethylene," <u>J. of Applied Polymer Science</u> , Vol. 30, p. 3751-3765 (1985)

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/CL/	FA		H. Park et al., "Influence of long-chain branching on time-pressure and time-temperature shift factors for polystyrene and polyethylene," <u>Rheol Acta</u> , Vol. 46, p. 153-159 (2006)
	FB		C. Gabriel et al., "Influence of molecular structure on rheological properties of polyethylenes," <u>Rheol Acta</u> , Vol. 37, p. 7-20 (1998)
	FC		G. Schlatter et al., "Fourier Transform Rheology of Branched Polyethylene: Experiments and Models for Assessing the Macromolecular Architecture," <u>Macromolecules</u> , Vol. 38, p. 6492-6544 (2005)
	FD		H. Münstedt et al., "Influence of molecular structure on rheological properties of polyethylenes; Part II. Elongational behavior," <u>Rheol Acta</u> , Vol. 37, p. 21-29 (1998)
	FE		I. Vittorias et al., "Detection of Long-Chain Branching in Polyolefins via Fourier-Transform Rheology and Finite Element Simulations," <u>Macromol. Mat. Eng.</u> , p. 115-120 (2007)
	FF		G. Georgiou, "Stick-Slip Instability," <u>Polymer Processing Instabilities</u> edited by S. Hatzikiriakos & S. Migler, Dekker, NY, p. 161-206 (2005)
	FG		S. Wang et al., "Exploring molecular origins of sharkskin, partial slip, and slope change in flow curves of linear low density polyethylene," <u>J. Rheol.</u> , Vol. 40(5), p. 875-898 (1996)
	FH		S. Wang et al., "Stick-slip transition in capillary flow of linear polyethylene: 3. Surface conditions," <u>Rheol Acta</u> , Vol. 36, p. 128-134 (1997)
	FI		Office Action from currently allowed Application Serial No. <b>10/539,342</b> with mail date 5/11/06
	FJ		Response and Amendment from currently allowed Application Serial No. <b>10/539,342</b> with mail date 11/2/06
	FK		Office Action from currently allowed Application Serial No. <b>10/539,342</b> with mail date 1/19/07
	FL		Response and Amendment from currently allowed Application Serial No. <b>10/539,342</b> with mail date 6/15/07
	FM		Notice of Allowability from currently allowed Application Serial No. <b>10/539,342</b> with mail date 7/2/07
	FN		Office Action from currently pending Application Serial No. <b>10/538,540</b> with mail date 4/6/06
	FO		Response and Amendment from currently pending Application Serial No. <b>10/538,540</b> with mail date 10/6/06
↓	FP		Office Action from currently pending Application Serial No. <b>10/538,540</b> with mail date 1/19/07

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)				
/CL/	GA		Response and Amendment from currently pending Application Serial No. <b>10/538,540</b> with mail date 7/19/07	
↓	GB		Office Action from currently pending Application Serial No. <b>10/538,540</b> with mail date 10/18/07	
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